

In the Claims:

Amend Claims 82, 83, 87, 88, 91, 94, and 97-100 as indicated below.

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E' 82. (Amended) A method for stimulating an immune response in an animal, the immune response being directed toward a self-epitope, the method comprising:

- a) providing a ubiquitin fusion protein comprising ubiquitin fused to one or more epitope-containing segments at contiguous or non-contiguous locations within ubiquitin, the epitope-containing segments comprising two or more identical or non-identical non-ubiquitin self-epitopes, wherein the ubiquitin fusion protein is immunogenic for the non-ubiquitin self-epitopes therein; and
- b) administering the ubiquitin fusion protein of step a) to an animal under conditions appropriate for the stimulation of an immune response, thereby stimulating an immune response to the non-ubiquitin self-epitopes.

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G' 83. (Amended) The method of Claim 82 wherein the ubiquitin fusion protein of step a) is further conjugated to an immunogenic carrier protein prior to administration.

G' E' 87. (Amended) The method of Claim 85 wherein the ubiquitin is modified such that the epitope-containing segment fused to the C-terminus of ubiquitin is non-cleavable by a ubiquitin-specific protease.

88. (Amended) The method of Claim 84 wherein the non-ubiquitin self-epitope is a peptide hormone.

G' Q3 91. (Amended) The method of Claim 90 wherein the physiological consequence of administration of the ubiquitin fusion protein to the animal is immunocastration of the animal.

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E4
94. (Amended) The method of Claim 90 wherein two epitope-containing segments, each comprising the amino acid sequence QHWSYGLRPGQHWSYGLRPG (SEQ ID NO: 26) are fused to a single ubiquitin molecule at non-contiguous locations within ubiquitin, one being fused to the N-terminal amino acid of ubiquitin, the other being fused at an internal site of ubiquitin, the internal site being between residue 35 and 36 of ubiquitin.

97. (Amended) A method for stimulating an immune response in an animal, the immune response being directed toward a self-epitope, the method comprising:

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- a) providing a ubiquitin fusion protein comprising ubiquitin fused to a single epitope-containing segment, the epitope-containing segment comprising two or more identical non-ubiquitin self-epitopes, wherein the ubiquitin fusion protein is immunogenic for the non-ubiquitin self-epitopes therein;
 - b) administering the ubiquitin fusion protein of step a) to an animal under conditions appropriate for the stimulation of an immune response, thereby stimulating an immune response to the non-ubiquitin self-epitopes.

98. (Amended) A method for stimulating an immune response in an animal, the immune response being directed toward a self-epitope, the method comprising:

- a) providing a ubiquitin fusion protein comprising ubiquitin fused to two or more epitope-containing segments, at contiguous or non-contiguous locations within ubiquitin, each epitope-containing segment comprising one or more identical or non-identical non-ubiquitin self-epitopes, wherein the ubiquitin fusion protein is immunogenic for the non-ubiquitin self-epitopes therein;

- b) administering the fusion protein of step a) to an animal under conditions appropriate for the stimulation of an immune response, thereby stimulating an immune response to the non-ubiquitin self-epitopes.

99. (Amended) A method for stimulating an immune response in an animal, the immune response being directed toward a self-epitope, the method comprising:

- a) providing a ubiquitin fusion protein comprising ubiquitin fused to a single epitope-containing segment comprising two or more identical or non-identical non-ubiquitin self-epitopes, the epitope-containing segments being fused to ubiquitin at fusion sites selected from the group consisting of the N-terminus and an internal fusion site, wherein the ubiquitin fusion protein is immunogenic for the non-ubiquitin self-epitopes therein;
- b) administering the ubiquitin fusion protein of step a) to an animal under conditions appropriate for the stimulation of an immune response, thereby stimulating an immune response to the non-ubiquitin self-epitopes.

100. (Amended) A method for stimulating an immune response in an animal, the immune response being directed toward a self-epitope, the method comprising:

- a) providing a ubiquitin fusion protein comprising ubiquitin fused to a single epitope-containing segment comprising one or more identical or non-identical non-ubiquitin self-epitopes, the epitope-containing segment being fused to ubiquitin at the N-terminus of ubiquitin, wherein the ubiquitin fusion protein is immunogenic for the non-ubiquitin self-epitopes contained therein;
- b) administering the fusion protein of step a) to an animal under conditions appropriate for the stimulation

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of an immune response, thereby stimulating an immune
response to the non-ubiquitin self-epitopes.
